



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,487	09/21/2004	Khamir Girish Joshi	04-11	5486

32583 7590 07/26/2007  
KELLOGG BROWN & ROOT LLC  
ATTN: IP LEGAL DEPARTMENT  
4100 Clinton Drive  
HOUSTON, TX 77020

EXAMINER
----------

SINGH, SUNIL

ART UNIT	PAPER NUMBER
----------	--------------

3673

MAIL DATE	DELIVERY MODE
-----------	---------------

07/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/711,487

Applicant(s)

JOSHI ET AL.

Examiner

Sunil Singh

Art Unit

3673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-14,16-34,50-62 and 64-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-14,16-34,50-62 and 64-72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1,3-6,8-14, 16-34, 50-62, 64-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with indefiniteness and antecedent basis. Applicant should carefully review all claims and make appropriate corrections. Some examples are noted:

The independent claims are indefinite since one cannot determine what are the "solutions".

Several of the dependent claims relate back to their respective independent claims by referencing "the buoyancy solution"; however, the independent claims call for two or more buoyancy solutions therefore the dependent claims lack proper antecedent basis.

Claims 52-57 all lack proper antecedent basis. For example, "said second flexure control device" lacks clear antecedent basis.

Claim 70 is confusing since it requires a buoyant coating which cannot depend from claim 67 which requires a plurality of discrete buoyant modules.

**Insofar the claims are understood, the following rejection(s) apply:**

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,6,50,51,52-57,66,71 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrison '670.

Harrison discloses a subsea pipeline (10) comprising a first pipeline (see member 10 @ left side of Fig. 4), intermediate buoyant pipeline section (see member 10 @ 20 of Fig. 4), the two buoyancy solutions are considered (pipe 10 where member 20 is attached from the center to the right a little bit and from the center to the left a little bit) and a second pipeline (see member 10 @ right side of Fig. 4).

With regards to claim 50, the two buoyancy solutions are considered (pipe 10 where member 20 is attached from a little to the right of the center to the right a little bit and from a little to the left of the center to the left a little bit, the flexible positively buoyant inverse catenary section (is considered the pipe section where member (20) is attached). The pipe section a little to the right and left of the center is considered to meet the spatial limitation.

With regards to claims 52-57, insofar the claims are understood, Harrison teaches the features called for in said mentioned claims. It should be noted that Harrison teaches weighted joints or anchors (18) (see col. 3 line 55+).

Art Unit: 3673

5. Claims 1,3,5-6,8-14,16, 25-27, 33-34,50,66-69,71,72 are rejected under 35 U.S.C. 102(a) as being anticipated by Wipo '014. (WO 2004/068014).

Wipo '014 discloses an apparatus (1) to traverse a seabed topographic feature comprising a subsea pipeline (1) constructed to carry fluids from a first location (this is considered as the left of Fig. 1) across the topographic feature to a second location (this is considered as the right of Fig. 1) wherein the topographic feature is selected from the group consisting of subsea, basins, domes, valleys, cliffs, canyons, escarpments and combinations thereof, said pipeline including at least one distributed buoyancy region (6,25,26) said pipeline comprising a first unbuoyed pipeline section (2) extending from said first location on a sea floor (4) to said distributed buoyancy region and a second unbuoyed pipeline section (3) extending from said distributed buoyancy region to said second location on a sea floor and said distributed buoyancy region connecting said first and said second pipeline sections in fluid communication. The two buoyancy solutions (this is considered as the first and third sections of members (6,25,26) and the flexible positively buoyant inverse section is considered as the middle section between the first and third sections of members (6,25,26). The first and third sections of members (6,25,26) are spatially related. Buoyancy modules (see page 4 line 1). Tether system (see Figures). First flexure (7) and second flexure (8). First flexure includes an anchor (see Fig. 4). Negatively buoyant (see Figs. 3,4). Positively buoyant (see Figs. 5-7).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4,70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wipo '014 in view of Moses et al. '977.

Wipo '014 discloses the invention substantially as claimed. However, Wipo '014 is silent about the buoyancy region comprising a continuous coating of buoyant material. Moses et al. teach a buoyancy region comprising a continuous coating of buoyant material ((62), see Fig. 6 and col. 6 line 55+). It would have been considered obvious to one of ordinary skill in the art to modify Wipo '014 by substituting the buoyancy means as taught by Moses et al. for the buoyancy means as disclosed by Wipo '014 since it is a design choice to substitute equivalent parts for performing equivalent functions. Such modification allows for the buoyancy section to be constructed in a factory and thus reduce time at the installation point.

Art Unit: 3673

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison '670 in view of Luppi (2005/0158126).

Harrison discloses the invention substantially as claimed. However, Harrison lacks a plurality of buoyancy means. Luppi teaches a plurality of buoyancy means (22-24). It would have been considered obvious to one of ordinary skill in the art to modify Harrison to include a plurality of buoyancy members as taught by Luppi in order to control the tension forces applied to the pipeline.

9. Claims 8,9,17-27, 28-32, 52-58, 60,61,62,64-65,67,70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison '670 in view of Moses et al. '977.

Harrison discloses an apparatus to traverse a seabed topographic feature comprising a subsea pipeline (10) constructed to carry fluids from a first location (see left or right side of Figure 4) across the topographic feature to a second location (see left or right side of Figure 4) wherein the topographic feature is selected from the group consisting of subsea, basins, domes, valleys, cliffs, canyons, escarpments and combinations thereof; said pipeline including at least one unanchored distributed buoyancy region (see Fig. 4 pipeline portion where member 20 is connected to), said pipeline comprising a first unbuoyed pipeline section (member 10 @ left or right side of Fig. 4) extending from said first location on a sea floor to said distributed buoyancy region and a second unbuoyed pipeline section (member 10 @ left or right side of Fig. 4) extending from said distributed buoyancy region to said second location on a sea floor. It should be noted that Harrison teaches weighted joints or anchors (18) (see col. 3 line 55+). With regards

Art Unit: 3673

to claim 58, the two buoyancy solutions are considered (pipe 10 where member 20 is attached from a little to the right of the center to the right a little bit and from a little to the left of the center to the left a little bit, the flexible positively buoyant inverse catenary section (is considered the pipe section where member (20) is attached).

Harrison discloses the invention substantially as claimed. However, Harrison is silent about including a first and second flexure device. Moses et al. teach flexure devices (32). It would have been considered obvious to one of ordinary skill in the art to modify Harrison to include flexure devices as taught by Moses et al. at the weighted joints (where member 18 is positioned in Fig. 4 and see col. 3 line 55+) in order to reduce stress.

With regards to claims 60 and 70, Harrison is silent about the buoyancy region comprising a continuous coating of buoyant material. Moses et al. teach a buoyancy region comprising a continuous coating of buoyant material ((62), see Fig. 6 and col. 6 line 55+). It would have been considered obvious to one of ordinary skill in the art to modify Harrison by substituting the buoyancy means as taught by Moses et al. for the buoyancy means as disclosed by Harrison since it is a design choice to substitute equivalent parts for performing equivalent functions.

With regards to claim 61, it would have been considered obvious to one of ordinary skill in the art to modify Harrison to include tether/anchor means such as member (18).



Art Unit: 3673

10. Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison in view of Moses et al. as applied to claim 58 above, and further in view of Luppi.

Harrison (once modified) discloses the invention substantially as claimed. However, the (once modified) Harrison lacks a plurality of buoyancy means. Luppi teaches a plurality of buoyancy means (22-24). It would have been considered obvious to one of ordinary skill in the art to further modify the (once modified) Harrison to include a plurality of buoyancy members as taught by Luppi in order to control the tension forces applied to the pipeline.

#### ***Response to Arguments***

11. Applicant's arguments filed 5/7/07 have been fully considered but they are not persuasive. Applicant argues that Harrison fails to disclose two or more buoyancy solutions. The examiner disagrees. The two buoyancy solutions are considered (pipe 10 where member 20 is attached from the center to the right a little bit and from the center to the left a little bit) and a second pipeline. Applicant argues that only frame 25 is supported by buoyancy devices. The examiner disagrees. Intermediate pipeline (26) is supported by frame 25 and thus is supported by the buoyancy devices. With regards to the two buoyancy solutions, Wipo teaches the two buoyancy solutions (this is considered as the first and third sections of members (6,25,26) and the flexible positively buoyant inverse section is considered as the middle section between the first and third sections of members (6,25,26). The first and third sections of members (6,25,26) are spatially related. Applicant argues that Moses does not teach a continuous coating. Figure 6 of Moses clearly shows continuous coating. Whether or

Art Unit: 3673

not the coating is a short section is of no consequence, the claims do not limit the length of the coating. Applicant argues that Luppi does not teach one or more discrete buoyancy modules. The examiner disagrees. Members 23, 24 etc. clearly show discrete modules. With regards to the two buoyancy solutions, such limitations are addressed above in the discussion of Harrison. Applicant argues that it is not obvious to modify Harrison to include the flexible couplings as taught by Moses since such pipeline is not subject to tidal wave. It should be noted however, that subsea current is of concern, therefore, one skilled in the art would provide flexible coupling to compensate for induced stress.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

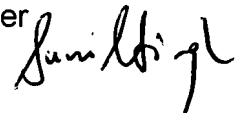
Art Unit: 3673

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunil Singh whose telephone number is (571) 272-7051. The examiner can normally be reached on Monday through Friday 10:30 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Engle Patricia can be reached on (571) 272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sunil Singh  
Primary Examiner  
Art Unit 3673



SS

58  
7/20/07